

Applicants: Allan Green et al.  
Serial No.: 09/837,751 Filed: April 18, 2001  
Page: 2 of 17 of February 4, 2005 Amendment

In the Claims

Please amend the claims by replacing all prior versions of the claims pursuant to 37 C.F.R. §1.121 as indicated below. Specifically, please cancel claims 127-130 and 140-143 without prejudice to applicants' right to pursue these claims in a continuing application, as indicated.

109. (Previously presented) A process for producing a cotton plant wherein the fatty acid of the seed oil of the plant comprises 58.5% oleic acid, the process comprising the step of introducing into a cotton plant a gene construct encoding a ribonucleotide molecule which reduces expression of the endogenous cotton *ghFAD2-1* gene in the seed of the cotton plant, thereby producing the cotton plant.
110. (Previously presented) The process of claim 109, wherein the fatty acid of the seed oil comprises 66% oleic acid.
111. (Previously presented) The process of claim 110, wherein the fatty acid of the seed oil comprises 68.9% oleic acid.
112. (Previously presented) The process of claim 109, wherein the seed oil has a decreased palmitic acid content relative to the seed oil from an isogenic non-transformed plant.
113. (Previously presented) The process of claim 109, wherein the ribonucleotide molecule comprises nucleotides encoded by a sequence, in the sense or antisense orientation, selected from the group consisting of:
  - (A) the nucleotide sequence set forth in SEQ ID NO: 3 or SEQ ID NO: 7; and
  - (B) a nucleotide sequence which encodes the amino acid sequence set forth in SEQ ID NO: 4.

Applicants: Allan Green et al.  
Serial No.: 09/837,751 Filed: April 18, 2001  
Page: 3 of 17 of February 4, 2005 Amendment

114. (Previously presented) The process of claim 109, wherein the ribonucleotide molecule comprises an inverted repeat comprising nucleotides having a sequence corresponding to at least 25 nucleotides of the endogenous cotton *ghFAD2-1* gene transcript linked to nucleotides having a sequence which is complementary to the sequence of the at least 25 nucleotides.
115. (Previously presented) The process according to claim 114, wherein the at least 25 nucleotides are from the 5'-untranslated region of SEQ ID NO: 3.
116. (Previously presented) The process of claim 114, wherein the at least 25 nucleotides are from the 5'-untranslated region of the *ghFAD2-1* gene set forth in SEQ ID NO: 7.
117. (Previously presented) The process of claim 109, wherein the gene construct comprises a promoter selected from the group consisting of the soybean lectin promoter sequence and the *ghFAD2-1* gene promoter.
118. (Previously presented) A transgenic cotton plant produced by the process of claim 109 comprising a gene construct encoding a ribonucleotide molecule which reduces expression of the endogenous cotton *ghFAD2-1* gene in the seed of the cotton plant.
119. (Previously presented) A transgenic cotton plant wherein the fatty acid of the seed oil of the plant comprises 58.5% oleic acid.

Applicants: Allan Green et al.

Serial No.: 09/837,751

Filed: April 18, 2001

Page: 4 of 17 of February 4, 2005 Amendment

120. (Previously presented) The transgenic cotton plant of claim 119, wherein the fatty acid of the seed oil comprises 66.0% oleic acid.
121. (Previously presented) The transgenic cotton plant of claim 120, wherein the fatty acid of the seed oil comprises 68.9% oleic acid.
122. (Previously presented) The transgenic cotton plant of claim 119, wherein the seed oil has a decreased palmitic acid content relative to the seed oil from an isogenic non-transformed plant.
123. (Previously presented) A transgenic cotton seed of the plant of claim 118.
124. (Previously presented) A transgenic cotton seed of the plant of claim 119.
125. (Previously presented) A transgenic cotton seed of the plant of claim 120.
126. (Previously presented) A transgenic cotton seed of the plant of claim 122.
- 127-130. (Canceled)

131. (Previously presented) A process for producing cotton seed oil wherein the fatty acid of the oil comprises 58.5% oleic acid, the process comprising the steps of:
  - (A) obtaining a transgenic cotton plant comprising a gene construct encoding a ribonucleotide molecule which reduces expression of the endogenous cotton *ghFAD2-1*

Applicants: Allan Green et al.  
Serial No.: 09/837,751 Filed: April 18, 2001  
Page: 5 of 17 of February 4, 2005 Amendment

gene in the seed of the cotton plant; and

(B) growing the transgenic cotton plant for a time and under conditions sufficient for the production of cotton seed by the cotton plant, wherein the fatty acid of the oil of the cotton seed comprises 58.5% oleic acid; and

(C) extracting the oil from the cotton seed, thereby producing the cotton seed oil.

132. (Previously presented) The process of claim 131, wherein the fatty acid of the cotton seed oil comprises 66% oleic acid.

133. (Previously presented) The process of claim 132, wherein the fatty acid of the cotton seed oil comprises 68.9% oleic acid.

134. (Previously presented) The process of claim 131, wherein the cotton seed oil has a decreased palmitic acid content relative to seed oil from an isogenic non-transformed plant.

135. (Previously presented) The process of claim 131, wherein the ribonucleotide molecule comprises nucleotides, encoded by a sequence, in the sense or antisense orientation, selected from the group consisting of:

(A) the nucleotide sequence set forth in SEQ ID NO: 3 or SEQ ID NO: 7; and

(B) a nucleotide sequence which encodes the amino acid sequence set forth in SEQ ID NO: 4.

Applicants: Allan Green et al.  
Serial No.: 09/837,751 Filed: April 18, 2001  
Page: 6 of 17 of February 4, 2005 Amendment

136. (Previously presented) The process of claim 131, wherein the ribonucleotide molecule comprises an inverted repeat comprising nucleotides having a sequence corresponding to at least 25 nucleotides of the endogenous cotton *ghFAD2-1* gene transcript linked to nucleotides having a sequence which is complementary to the sequence of the at least 25 nucleotides.
137. (Previously presented) The process according to claim 136, wherein the at least 25 nucleotides are from the 5'-untranslated region of SEQ ID NO: 3.
138. (Previously presented) The process of claim 136, wherein the at least 25 nucleotides are from the 5'-untranslated region of the *ghFAD2-1* gene set forth in SEQ ID NO: 7.
139. (Previously presented) The process of claim 131, wherein the gene construct comprises a promoter selected from the group consisting of the soybean lectin promoter sequence and the *ghFAD2-1* gene promoter.
- 140-143. (Canceled)
144. (Previously presented) A gene construct for increasing the oleic acid content of cottonseed oil, comprising nucleotides having a sequence encoding a ribonucleotide molecule which reduces expression of the endogenous cotton *ghFAD2-1* gene in the seed of the cotton plant, wherein the sequence is selected from the group consisting of:
- (A) an inverted repeat sequence comprising a sequence of at least 25 nucleotides from the 5'-untranslated region of SEQ ID NO: 3 linked to a nucleotide sequence which is complementary to the sequence of at least 25

Applicants: Allan Green et al.  
Serial No.: 09/837,751 Filed: April 18, 2001  
Page: 7 of 17 of February 4, 2005 Amendment

nucleotides; and

(B) an inverted repeat sequence comprising a sequence of at least 25 nucleotides from the 5'-untranslated region of the *ghFAD2-1* gene set forth in SEQ ID NO: 7 linked to a nucleotide sequence which is complementary to the sequence of at least 25 nucleotides.

145. (Previously presented) The gene construct of claim 144, comprising a promoter sequence selected from the group consisting of a soybean lectin gene promoter sequence and the *ghFAD2-1* gene promoter.

146. (Previously presented) The gene construct of claim 144, wherein the inverted repeat sequence comprises an intervening sequence between the sequence of at least 25 nucleotides and the sequence complementary thereto.